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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/28423

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 29/00, 17/042
US CL : 166/277,382,207,208

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 166/277,382,207,208,297,55,55.1,206,212,216,214,242.1,242.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 6,607,220 B2 (Sivley, IV) 19 August 2003 (19.08.2003), Figures.	1,4,6,13,17,18,20,21,25 28,30,33- 38,41,44,45,53,57,58,6 0,61,65-70,73,76,77 ----- 2,3,5,7-12,14-16,19,22- 24,26,27,29,31,32,39,4 0,42,43,45,47-52,54- 56,59,62- 64,71,72,74,75
Y	US 6,543,552 B1 (Metcalf et al.) 08 April 2003 (08.04.2001), Figures.	2,3,5,7-12,14-16,19,22- 24,26,27,29,31,32,39,4 0,42,43,45,47-52,54- 56,59,62- 64,71,72,74,75

☒ Further documents are listed in the continuation of Box C.



See patent family annex.

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- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
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later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

Date of mailing of the international search report

21 April 2005 (21.04.2005)

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/28423

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 2004/0231839 A1 (Ellington et al.) 25 November 2004 (25.11.2004), Figures.	1-77
A,P	US 2004/0060706 A1 (Stephenson) 01 April 2004 (01.04.2004), Figures.	1-77
A	US 2003/0075338 A1 (Sively, IV) 24 April 2003 (24.04.2003), Figures.	1-77
A	US 6,419,025 B1 (Lohbeck et al.) 16 July 2002 (16.07.2002), Figures.	1-77
A,P	US 2004/0221996 A1 (Burge) 11 November 2004 (11.11.2004), Figures.	1-77
A	US 2003/0042022 A1 (Lauritzen et al.) 06 March 2003 (06.03.2003), Figures.	1-77
A	US 6,527,049 B2 (Metcalf et al.) 04 March 2003 (04.03.2003), Figures.	1-77
A,P	US 6,722,443 B1 (Metcalf) 20 April 2004 (20.04.2004), Figures.	1-77